

訂正版

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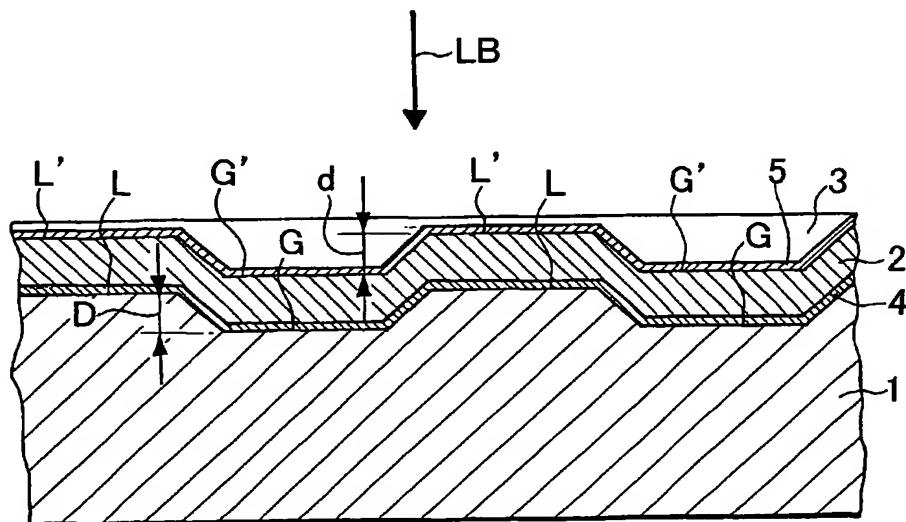
(81) 指定国(国内): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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[続葉有]

(54) Title: METHOD AND APPARATUS FOR RECORDING/REPRODUCING OPTICAL INFORMATION

(54) 発明の名称: 光学的情報記録再生の方法及び装置



(57) Abstract: A substrate (1) having a guide groove for tracking with spot irradiation light beam for recording/reproduction of information is provided with a recording layer (2) and a light transmitting layer (3). The recording layer (2) is irradiated with a spot light beam through the light transmitting layer (3) to record information on both a first portion (L') of the recording layer corresponding to an adjacent flat section (L) between guide grooves and a second portion (G') of the recording layer corresponding to a guide groove inside (G). Recording marks with mark lengths of $nT-mT$ (where T is a unit length, n, m are integers of one or more, $n < m$) are formed on the first and second portions (L', G'). The amplitude IL1 of a reproduced signal from the longest recording mark with the mark length of mT recorded on the first portion (L') and the amplitude IL2 of a reproduced signal from the longest recording mark with the mark length of mT recorded on the second portion (G') satisfy the relation $1 < (IL1/IL2) < 1.3$.

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(AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI 特許 (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(15) 訂正情報:
PCTガゼットセクションIIの No.08/2004 (2004年2月19日)を参照

添付公開書類:
— 國際調査報告書

(48) この訂正版の公開日:

2004年2月19日

2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

(57) 要約:

情報の記録・再生のためにスポット状に照射される光のトラッキング用の案内溝を有する基板(1)上に記録層(2)及び光透過層(3)が設けられており、光透過層(3)の側から記録層(2)に対してスポット光を照射して、隣接する案内溝間平坦部(L)に対応する記録層の第1の部分(L')および案内溝内部(G)に対応する記録層の第2の部分(G')の両方に記録を行う。第1及び第2の部分(L', G')の両方にマーク長nT~mT(ここで、Tは単位長さであり、n, mは1以上の整数であり、n < mである)の記録マークが形成される。第1の部分(L')に記録されるマーク長mTの最長記録マークからの再生信号の振幅IL1と第2の部分(G')に記録されるマーク長mTの最長記録マークからの再生信号の振幅IL2とが $1 < (IL1 / IL2) < 1$ の関係を満たす。

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/04882

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ G11B7/0045, 7/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ G11B7/00-7/013, 7/24, 7/30

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

| | | | |
|---------------------------|-----------|----------------------------|-----------|
| Jitsuyo Shinan Koho | 1922-1996 | Jitsuyo Shinan Toroku Koho | 1996-2003 |
| Kokai Jitsuyo Shinan Koho | 1971-2003 | Toroku Jitsuyo Shinan Koho | 1994-2003 |

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| Y | JP 7-121878 A (Matsushita Electric Industrial Co., Ltd.), 12 May, 1995 (12.05.95), Par. No [0008] (Family: none) | 10-19 |
| Y | JP 8-007282 A (Matsushita Electric Industrial Co., Ltd.), 12 January, 1996 (12.01.96), Par. No. [0011], & US 5568461 A | 10-19 |
| Y | JP 9-167348 A (Matsushita Electric Industrial Co., Ltd.), 24 June, 1997 (24.06.97), Par. No. [0006] & EP 712119 A & US 5850378 A | 10-19 |

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
24 July, 2003 (24.07.03)Date of mailing of the international search report
12 August, 2003 (12.08.03)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/04882

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| Y | JP 10-083536 A (Nikon Corp.), 31 March, 1998 (31.03.98), Par. Nos. [0004], [0005] & US 5936924 A | 10-19 |
| Y | JP 2002-008269 A (Sony Corp.), 11 January, 2002 (11.01.02), Par. Nos. [0026], [0028], [0034] (Family: none) | 10-19 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/04882

Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 1-9
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
(see extra sheet)

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/04882

Continuation of Box No. I-2 of continuation of first sheet(1)

Claim 1 defines an invention characterized in that the amplitude IL1 of a reproduced signal from the longest recording mark recorded on the first portion and the amplitude IL2 of a reproduced signal from the longest recording mark recorded on the second portion satisfy the relation $1 < (IL1/IL2) < 1.3$. However, it is unclear what constitution of an information record medium satisfies the said relation.

Reproduction of a signal of what level of amplitude from marks recorded on a land and a groove depends upon the shapes of the land and groove, the optical properties of the materials which constitute the layers of the optical disc, and its thickness, the laser irradiation condition under which information is recorded/reproduced on/off the optical disk, the conditions such as servo, the characteristics of the recording/reproducing apparatus. Therefore, restricting a medium according to a characteristic of the reproduced signal makes it impossible to specify the constitution of the information record medium.

Since claims 2-9, as in claim 1, define restriction of a medium according to a characteristic of the reproduced signal, the medium cannot be specified.

An information record medium defined in claims 1-9 is assumed to be not a medium such as a reproduction-only record medium having a prepit from which a signal with a specific characteristic can be always reproduced, but a normal land/groove information record medium on which information can be recorded by a general information recorder, as mentioned in "Background Art" of the description by the applicant.

Therefore, the medium constitution itself is nothing novel compared with a known information-recordable medium. The feature of the medium concerned is a method for recording information so as to reproduce a signal with a specific characteristic and the invention must therefore be defined as an information recording method or an information recorder.